

(No Model.)

L. F. RYAN.

2 Sheets—Sheet 1.

FOLDING TENT.

No. 378,977.

Patented Mar. 6, 1888.

Fig. 1.

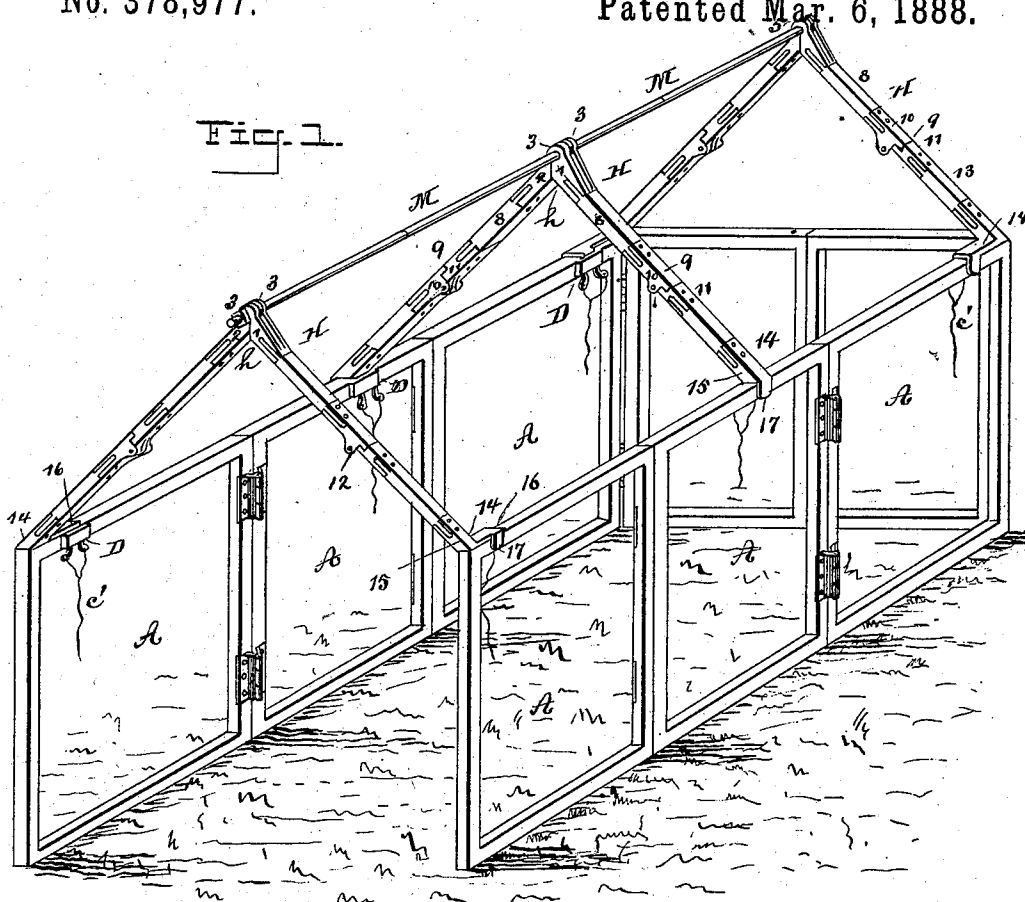
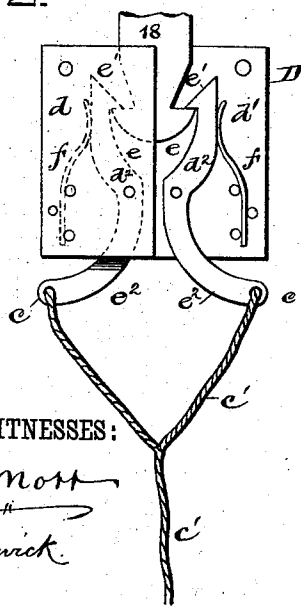


Fig. 2.



WITNESSES:

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Fig. 3.

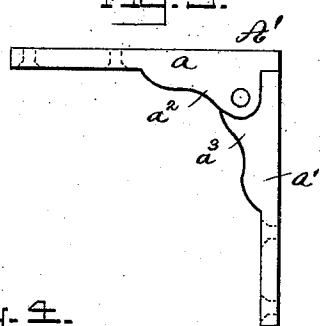
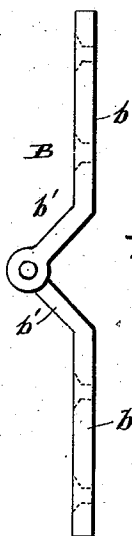


Fig. 4.



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Fig. 5.

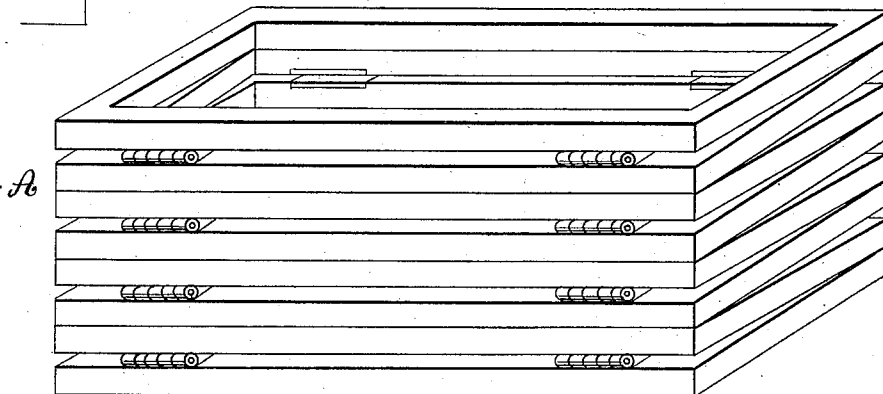


Fig. 6.

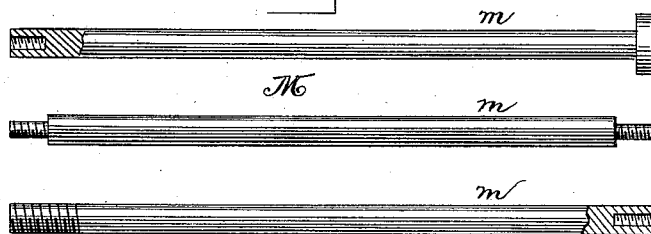
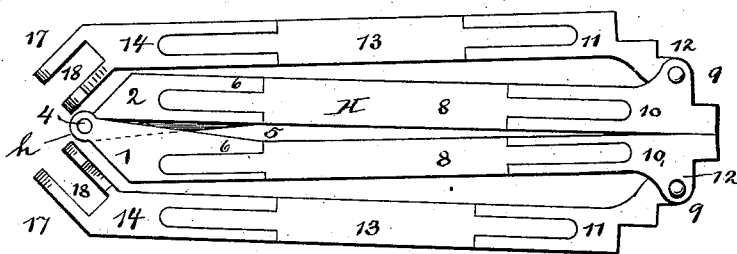


Fig. 7.



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UNITED STATES PATENT OFFICE.

LAURENCE F. RYAN, OF NEW YORK, N. Y.

FOLDING TENT.

SPECIFICATION forming part of Letters Patent No. 378,977, dated March 6, 1888.

Application filed August 8, 1887. Serial No. 246,431. (No model.)

To all whom it may concern:

Be it known that I, LAURENCE F. RYAN, of the city, county, and State of New York, have invented a new and Improved Folding Tent, of which the following is a full, clear, and exact description.

My invention relates to an improvement in folding tents, and has for its object to provide a tent capable of being folded in a small compass for transportation, and wherein, when set up for use, the tent will be firm and commodious, and wherein also the tent may be quickly and easily struck or set up with little labor and in a short space of time.

The invention consists in the construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters and figures of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of my tent-frame set up, and Fig. 2 is a detail view of the locking device. Figs. 3 and 4 are detail views of the hinges employed. Fig. 5 is a view of the frame folded for transportation, and Fig. 6 is a detail view of the adjusted ridge-pole. Fig. 7 is a side view of the folded rafters.

In carrying out the invention the body of the tent-frame is constructed of a series of rectangular frames, A, the contiguous sides of the frames constituting the angles when the body is set up, being connected at top and bottom by a bracket-hinge, A', (illustrated in Fig. 3,) consisting of two arms, *a* and *a'*, the arm *a* being provided near one end longitudinally at top and bottom with ears *a²*, and the arm *a'* with a central longitudinal cam-faced lug, *a³*, near one end adapted to be held between the ears *a²* by a suitable pin. The normal position of the arms is at right angles to each other, the cam-surface of the lug *a³* holding them quite rigid in this position. The arms, however, are capable of folding parallel with each other, with an intervening space.

The frames, which are designed to be in alignment when the tent is set up, have their contiguous sides united by the form of hinge, B, illustrated in Fig. 4, consisting of two horizontal arms, *b*, arranged in the same plane, having their pivotally-united ends *b'* bent out-

ward at an angle toward each other, whereby, when the said arms are folded on the hinge shut, the horizontal portion of each arm will be parallel and a distance apart, the distance being equal to the distance intervening the arms *a* *a'* of the hinge A'.

It will be observed, as shown in Fig. 5, that when the several frames hinged as above are folded for shipment a space is provided between each frame. This space is purposed to accommodate a locking device, D, which is attached to the inner face of the upper ends of the frames, as shown in Fig. 1, projecting out therefrom. The spaces need, therefore, be only sufficient to accommodate the device as aforesaid.

The locking device consists of two spaced and parallel plates, *d* *d'*, having pivoted between them two compound curved levers, *d²*, the said levers being pivoted one facing the other, about centrally their length, as shown in Fig. 2.

The opposing surfaces *e* of the levers *d²* above their pivotal points are concaved, and the said levers at their upper extremities are provided with opposing hooks *e'*. Below the pivotal point the inner contiguous edges, *e²*, of the levers are convexed and made to project downward and outward below the plates or casing. The outer end of each lever is provided with an eye, *c*, in which cords *c'* are fastened, adapted to be merged into one, and the said single cord is made to hang down within the tent, as shown in Fig. 1.

Between the plates *d* and *d'* two springs, *f*, are secured at their lower ends, one near the outer edge of each lever below their pivotal point, the free ends of said springs being adapted to engage the upper outer edges of the levers and normally keep the hooks *e'* in contact.

The rafters H are constructed to fold in sections for transportation, and when the tent-frame is set up the said rafters are held in engagement with the frames by the aforesaid locking device D.

The rafters each consist of a ridge-casting, *h*, constructed in two sections, 1 and 2, having their opposing ends beveled in order that the two sections when abutted will form an obtuse angle, as shown in Fig. 1.

The section 1 upon the upper edge at each

side is provided with two longitudinal projections, 3, terminating over the beveled edge in eyes 4, and a similar central projection, 5, is provided upon the section 2, also terminating in an eye, which eye is adapted to enter the space between the eyes 4. By passing a pin-
 5 tle through the aligning eyes a hinge joint is effected. When the ridge-casting is to be folded for transportation, the sections are carried over one upon the other. The projection
 10 5 will then enter the space intervening the projections 3, forming a tongue-and-groove connection, as shown in Fig. 7.

In each section 1 and 2 a longitudinal slot, 6, is cut, adapted to receive the tongue of wooden blocks 8, the opposite end of the blocks being entered intermediate hinged castings 9. The castings 9 are also made in two sections, 10 and 11, longitudinally slotted at their outer
 20 ends to receive the blocks, the inner and opposing ends of each section being stepped to form a tie when opened, in which event the top and bottom edges are in the same plane, as shown in Fig. 1. The hinge connection 12
 25 of the sections is effected at the under side of the opposing edges, as shown in Fig. 7, whereby when closed for transportation the two sections will close one upon the other, the ridge-casting, one section of the intermediate castings, and interposed blocks forming a complete folded section, as also shown in Fig. 7. A second block, 13, is attached to each outer
 30 section, 11, in a similar manner as in the attachment of the aforesaid blocks 8, and to the lower end of the blocks 13 the binding or final castings of the rafters are attached. The final casting employed at the ends of the frame differs in shape slightly from the similar casting employed between the ends.

The binding-casting 14, forming a portion of the end rafters, consists of an inclined slotted arm, 15, to which the blocks 13 are attached, and an integral inwardly-extending arm, 16, provided upon the outside at the end with a
 45 downwardly-extending lug, 17, and upon the inner side, also at the end, with a downwardly-projecting arrow-headed lug, 18, the two lugs being in alignment.

The binding-castings 14 for the intermediate rafters consist simply of the inclined slotted arm 15, provided with the attached and aligning lugs 17 and 18. The space intervening the lugs in each of the binding-castings is equal to the thickness of the frames A at the top, as
 55 shown in Fig. 1.

In operation the rafters, two or more in number, according to the dimensions of the frame-body, are mounted in position and the arrow-headed lugs 18 entered between the levers d' of the locking devices D, and the ridge-pole M, consisting of many sections m screwed

together, is passed through the edges of the ridge-castings, the pivotal pins being removed, and the ridge-pole is then secured in position by a nut screwed upon the section projecting
 65 beyond one end rafter, a head having been provided on the section projecting through the opposite end rafter. A canvas covering is then thrown over the structure and secured in any approved manner.

Pins of any desired or convenient shape may be driven in the ground and the several frames attached thereto, if found necessary, or the pins may only be placed at the corners.

In detaching the rafters to fold the tent frame the cords c' are pulled downward, which, opening the levers d' , releases the binding-castings from connection with the frames.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a folding frame, of hinged rafters detachably secured to said frame, a sectional ridge-pole passing through and connecting said rafters, and means for connecting the rafters with the frame, substantially as shown and described, and for the purpose herein set forth.

2. The combination, with the folding frames A and the locking devices D, secured at the upper edge of said frames, of hinged rafters detachably secured to said frames by said locking devices, and a sectional ridge-pole connecting said rafters at the angle thereof, substantially as shown and described.

3. The combination, with the folding frames A and a locking device attached to the upper side of said frames, consisting of the plates d' , the opposing spring-actuated levers d' , shaped with a compound curve and provided with a hook at their upper ends, of the hinged rafters H, provided with a lower section adapted to rest upon the frames, having an integral substantially arrow-shaped lug, 18, adapted to be engaged by said levers, and a sectional ridge-pole passing through and connecting said rafters, substantially as shown and described.

4. In a folding tent, a rafter adapted to support the roof thereof, consisting of the slotted and hinged metal ridge-section h , the intermediate slotted and hinged metal sections, 9, the interposed interlocking blocks 8 and 13, and slotted metal locking-sections 14, attached to said blocks 13, and provided with opposing lugs 17 and 18, the lug 18 having a substantially arrow-shaped head, substantially as and for the purpose herein specified.

LAURENCE F. RYAN.

Witnesses:

THOMAS M. HORAN,
 JOHN M. McDERMOTT.